

# PATENT ABSTRACTS OF JAPAN

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(54) GLOVES

(57)Abstract:

PROBLEM TO BE SOLVED: To provide new gloves having antimicrobial property and deodorizing property, preventing roughened skin, or the like, of hands of a user and excellent in hand care effect.

SOLUTION: The gloves are equipped with at least monolayer rubber layer or resin layer and contain a vegetable extract in at least either one layer of the rubber layer or the resin layer. The vegetable extract is extracted from at least one kind of material selected from the group comprising aloe, peach, peach leaf, Angelicae Radix, Glycyrrhizae Radix, citron, Houttuynia cordata Thunberg, rice bran, olive, beefsteak plant leaf, mugwort, coconut and seaweeds.

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CLAIMS

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[Claim]

[Claim 1] the glove which is a glove equipped with much more rubber layer or the resin layer at least, and is characterized by the aforementioned rubber layer or the resin layer having been much more alike at least, and making vegetable extractives contain

[Claim 2] The glove of the claim 1 publication which is the extractives extracted from at least one sort as which the aforementioned vegetable extractives are chosen out of the group which consists of the fruit and seaweed of licorice, \*\*\*\*, Houttuynia, U.S. bran, an olive, the sheet of a beefsteak plant, a sagebrush, and a coconut in the sheet of the aloe, a peach, and a peach, and the end of an angericae radix.

[Claim 3] The glove of claim 1 publication with which the aforementioned rubber layer is manufactured from a rubber latex.

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DETAILED DESCRIPTION

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[Detailed description]

[0001]

[The technical field to which invention belongs] this invention relates to the glove excellent in the hand care effect which prevents a hand dry area while it has antibacterial, deodorization nature, etc. in detail about a glove.

[0002]

[Prior art] The type (\*\*\*\*\* port type) formed as a glove broadly used in a home or a medical field in the layer which consists of rubber or a resin, the type (support type) which covers the layer of the above-mentioned rubber or a resin on the thin front face of the glove field of \*\*\*\* much more at least, and was formed in it are known from the former.

[0003] However, generally, since the productivity and the point of a manufacturing cost are thought as important, as for these gloves, the process at which the size and configuration of a hand of a user manufacture in large quantities what is not taken into consideration but has a fixed configuration is adopted. Moreover, recently, in order to fit a user's hand exactly and to perform fine work good, the glove which used the ductility film is proposed (publication-number 247704 [ five to ] official report etc.).

[0004] However, it sets into the glove mentioned above, especially the glove of an indication in the above-mentioned official report. It is easy to sweat when a hand is equipped since the permeability of a glove becomes bad while the fit nature of an insertion person's hand and a glove increased. The environment where detrimental bacteria, a virus, mold, etc. tend to breed in connection with sweating in the interior of a glove is made, and there was a problem a surface deterioration produces in a user's hand by bacteria etc., or the dermatosis etc. shows whose symptoms.

[0005] Moreover, when the glove was left after use for a long period of time, the tragomaschalia resulting from sweating at the time of work occurred, and it had also become the cause of making a subsequent user causing displeasure. Then, in order to give antibacterial, antifungal, deodorization nature, aroma nature, etc. to the glove indicated above, the glove which was made to contain medicines, such as the aforementioned antibacterial agent, and was manufactured in the material of applying medicines, such as an antibacterial agent, an anti-mold agent, a deodorant, and an aromatic, on the surface of a glove \*\*\*\* or a glove is proposed. With the glove of such a configuration, occurrence of the bacteria in the glove mentioned above, mold, and the tragomaschalia can be prevented.

[0006]

[Object of the Invention] However, we are anxious about occurrence of side effects, like since the consideration to a user's hand is insufficient when a synthetic medicine is especially used as these medicines, medicines, such as a usual antibacterial agent, an anti-mold agent, and an aromatic, and, a user causes the drug allergy by the above-mentioned medicine in the glove of an indication in the aforementioned official report.

[0007] Then, the purpose of this invention is offering the new glove excellent in the hand care effect which prevents the surface deterioration of a user's hand etc. while it has antibacterial, deodorization

nature, etc.

[0008]

[The means for solving a technical problem] the glove of this invention for solving the above-mentioned technical problem is a glove equipped with much more rubber layer or the resin layer at least, and it is characterized by the aforementioned rubber layer or the resin layer having been much more alike at least, and making vegetable extractives contain while the vegetable extractives with which the glove obtained by the above-mentioned configuration was boiled and contained in the mainframe of a glove, i.e., a rubber layer, and the resin layer give antibacterial [ to a glove ], deodorization nature, etc. -- a user's \*\*\*\* -- getting wet -- admiration and a smooth feeling -- admiration can be given smoothly, a hand dry area can be prevented, and a user's hand care effect can be raised

[0009] It is desirable to use the extractives extracted from at least one sort chosen out of the group which especially consists of the fruit and seaweed of licorice, \*\*\*\*, Houttuynia, U.S. bran, an olive, the sheet of a beefsteak plant, a sagebrush, and a coconut as the aforementioned vegetable extractives by this invention in the sheet of the aloe, a peach, and a peach and the end of an angericae radix. Moreover, if the simplification of the manufacturing process of a glove and the enhancement in a quality are taken into consideration in this invention, it is suitable to manufacture the aforementioned rubber layer from a rubber latex.

[0010]

[Gestalt of implementation of invention] Below, this invention is explained. a rubber layer or a resin layer boils the glove of this invention much more at least, and it contains vegetable extractives Although the extractives extracted from the well-known vegetation which has antibacterial, aroma nature, etc., and especially a limit does not have in \*\*\*\*, and is conventionally known for food, the vegetable drug, etc. as the above-mentioned vegetable extractives are raised if it is admiration and the vegetable extractives which get wet and give admiration etc. gently It is desirable especially to use the extractives extracted from at least one sort chosen out of the group which consists of the fruit and seaweed of licorice, \*\*\*\*, Houttuynia, U.S. bran, an olive, the sheet of a beefsteak plant, a sagebrush, and a coconut at this invention in the sheet of the aloe, a peach, and a peach and the end of an angericae radix.

[0011] Such vegetable extractives are (i). Since it is the extractives extracted from the vegetation which exists in (ii) nature which has high safety to a human body, it has the advantage of a grade which can come to hand cheaply and easily. In addition, especially limitation does not have the vegetable extractives used by this invention in a vegetable place of production, the extraction technique, the use gestalt, component composition, etc.

[0012] The loadings of the above-mentioned vegetable extractives are 3.0 - 5.0 % of the weight preferably 0.1 to 10% of the weight to the AUW of a rubber layer or a resin layer. The effect produced when the loadings of vegetable extractives are under the above-mentioned domain and medicines, such as an antibacterial agent and an anti-mold agent, are blended with a glove of preventing a surface deterioration and an allergic reaction is not done so. On the other hand, when the loadings of vegetable extractives exceed the above-mentioned domain, it leads to a cost rise.

[0013] Moreover, the glove of this invention is made to contain the above-mentioned antibacterial agent etc., and you may use it for it. [ as well as the conventional glove ] In this case, since the vegetable extractives itself demonstrate roles, such as an antibacterial agent, compared with the case where the conventional glove is used, an antibacterial effect equivalent to the conventional glove in the content of a few medicine can be demonstrated. Therefore, it is enabled to reduce sideration of the drug allergy by the medicine which was mentioned above.

[0014] The glove of the following modes is illustrated as a glove of this invention.

- The glove equipped with the rubber layer (only henceforth a rubber glove)

(1) The glove which is a glove which consists of a rubber layer (it is the same even if it replaces with resin layer and it uses resin layer) independent, and contained vegetable extractives in the aforementioned rubber layer.

(2) The glove which is a glove formed in the rubber layer more than a bilayer, and contained vegetable extractives in the outermost layer (after glove completion serves as an innermost layer) at least among

the rubber layers more than the aforementioned bilayer.

(3) The glove which contained vegetable extractives in the glue line which is the glove which consists of a prepared rubber layer (only henceforth a glue line), and the rubber layer much more at least in order to transplant hair easily in a cotton, rayon, etc., and turns into the outermost layer (after glove completion serves as an innermost layer) at least.

(4) The glove which is a glove which prepared much more rubber layer in the thin front face of the glove field made from cloth at least, and contained vegetable extractives in the aforementioned rubber layer.

- The glove equipped with the resin layer (only henceforth the glove made from a resin)

By replacing with a rubber layer and preparing a resin layer, it is the above (1). - The glove illustrated to (4) is producible.

- glove (5) equipped with the rubber layer and the resin layer For example, glove which was a glove which has the multilayer structure which piled up the rubber layer and the resin layer by

\*\*\*\*\*, heat sealing, adhesion, etc., and the aforementioned rubber layer or the resin layer was much more alike at least, and contained vegetable extractives.

[0015] A rubber glove is first explained among the gloves of this invention. the rubber which constitutes a rubber layer in the above-mentioned rubber glove \*\*\*\*\* -- unvulcanized rubbers, such as natural rubber and synthetic rubber, -- or when those latexes raise and \*\*\*\* takes into consideration the simplification of the manufacturing process of a rubber glove etc. by this invention especially, it is desirable to use a rubber latex

[0016] As the aforementioned synthetic rubber, a nitrile rubber, polyisoprene rubber, butadiene rubber, chloroprene rubber, a styrene butadiene rubber, etc. are raised, for example. As a latex of natural rubber, you may be any of the field latex also with a commercial fresh ammoniation latex. Moreover, in this invention, the mixed latex of the above-mentioned natural rubber and synthetic rubber (for example, polyisoprene rubber, butadiene rubber, acrylonitrile-butadiene rubber, etc.) is used, and the rubber glove which consists of natural rubber and other rubber is also included.

[0017] Next, how to manufacture the rubber glove of this invention using a rubber latex is explained. In order to manufacture the above-mentioned rubber glove, as shown in the following manufacture technique A and B, the conventionally well-known manufacture technique for manufacturing a \*\*\*\*\* port type or support type rubber glove is applied.

After blending various additives, such as a curing agent, a vulcanization accelerator, and a curing promotion assistant, with the rubber latex of manufacture technique A. \*\*\*\*\* port type rubber-glove \*\* non-vulcanization at a predetermined rate and ripening it for a while, the above-mentioned vegetable extractives are blended.

\*\* Apply a coagulant to the front face of the mould (mold) of a predetermined glove configuration.

\*\* Pull up the mould of the above-mentioned \*\* after immersing in the latex of \*\*, perform once the process which \*\*\*\*s a rubber layer on the surface of a mold, and form much more rubber layer in the concerned type of front face.

\*\* After curing the above-mentioned rubber layer every mould, covering is removed from a mold and it is manufactured.

[0018] (1) mentioned above by using the above-mentioned manufacture technique A The glove of a mode is producible. Moreover, (2) What is necessary is to perform the process which \*\*\*\*s the rubber layer in \*\* two or more times, and just to make the rubber layer more than a bilayer form in the front face of the mould of the above-mentioned \*\*, in order to produce the glove of a mode. Although the temperature and the conditions at the time of curing are conventionally set up suitably on well-known conditions, the vegetable extractives contained in a rubber layer cure them on the conditions which do not cause stain or decomposition. Specifically, it is good to carry out about 0.3 to 0.8 hours at 80-100 degrees C.

[0019] Above (3) In the glove of a mode, although vegetable extractives may be contained in the aforementioned rubber layer, it is suitable for the glue line which contacts a user's hand and directly to contain vegetable extractives. Except using the rubber latex which does not contain vegetable extractives for the mold of a glove, the aforementioned glue line forms a rubber layer like manufacture technique A

mentioned above, and is manufactured by drying and subsequently, curing this rubber layer, after flooding with the solution which blended every mould, a natural rubber latex, vegetable extractives, and adhesives.

[0020] As the above-mentioned adhesives, the emulsion of acrylic or an urethane system, a natural rubber latex, etc. are raised, for example.

The mould (mold) of the configuration of a manufacture technique B. support type rubber-glove \*\*' glove is equipped with the thin glove field made from cloth, and a coagulant is infiltrated into this glove field to it.

\*\* the process which pulls up the glove field of 'the above-mentioned \*\*' after immersing in the latex of every mould and the aforementioned \*\*, and \*\*\*\*s a rubber layer on the surface of a mold -- 1 time -- or carry out two or more times and form the rubber layer more than one layer or a bilayer in the concerned type of front face

\*\* Heat the glove field with which 'rubber layer was formed every mould, and make it cure.

[0021] (4) mentioned above by using the above-mentioned manufacture technique B The glove of a mode is producible. By the way, it is reported that a patient causes a dyspnea, anaphylaxis Mr. symptoms (an angioedema, \*\*\*\*\*, atrophy, cyanosis, etc.), etc. in recent years owing to the rubber goods which consists of natural rubber. It is surmised that the cause is protein which exists as an impurity in natural rubber.

[0022] And since the modality and amount changed with places of production, production stage, etc. of a natural rubber latex, such protein made a quality, a curing property, etc. of natural rubber produce dispersion, and had the problem on which the physical property of natural rubber is reduced. Then, in this invention, it is under water further about the rubber glove obtained from the above-mentioned process, protein is washed (the so-called leaching processing), and the process which removes the protein in a rubber layer is adopted.

[0023] Therefore, while the rubber physical property in the glove of this invention becomes good, the allergic reaction resulting from protein can be prevented. Moreover, in this invention, it may replace with the above-mentioned natural rubber latex, and the deproteinized-natural-rubber latex which removed the protein in a natural rubber latex conventionally using well-known technique (for example, a zymolysis method, a centrifuge method, etc.) may be used.

[0024] Furthermore, by this invention, in order to give slippage to a rubber-glove front face, it is usually under about 100-500 ppm chlorine water for 5 - 10 minutes, and the process which carries out chlorination (\*\*\*\*\* nation) processing is adopted. The mold of a glove has the usable thing made from earthenware and a ceramic etc., and it is formed in the same configuration as the glove to use.

[0025] As a coagulant used in the manufacture technique A and B of the above-mentioned rubber glove, a calcium nitrate, a calcium carbonate, a calcium chloride, etc. are raised, for example. Moreover, in this invention, \*\*\*\* processing can also be performed by the freezing liquid method make the rubber grain other than the manufacture technique A and B of the above-mentioned rubber glove condense using an electrostatic force, and the sensible-heat method using the rubber latex containing the sensible-heat coagulant.

[0026] For example, if the describing [ above ] sensible-heat method is used, \*\*\*\* is possible only by heating a mold, and the process which infiltrates a coagulant into applying on the surface of a mold \*\*\*\* or the glove field can be omitted. As an additive blended with a natural rubber latex, as mentioned above, conventionally well-known various additives, such as a vulcanization accelerator besides a curing agent, a curing promotion assistant (activator), an antioxidant, a bulking agent, and a dispersant, are raised.

[0027] As the above-mentioned curing agent, sulfur, an organic sulphur-containing compound, etc. are raised, for example, and, as for the loadings, it is desirable that it is 0.5 - 3 weight section grade to the solid rubber component 100 weight section of a rubber latex. As a vulcanization accelerator, PX (N-ethyl-N-phenyl dithiocarbamic-acid zinc), PZ (zinc dimethyldithiocarbamate), EZ (diethyl dithiocarbamic-acid zinc), BZ (zinc dibutyldithiocarbamate), MZ (zinc salt of 2-mercaptobenzothiazole), TT (tetramethylthiuramdisulfide), etc. are raised, for example. These are

independent, or can mix and use two or more sorts. As for the loadings, it is desirable that it is 0.5 - 3 weight section grade to the solid rubber component 100 weight section of a rubber latex.

[0028] As a curing promotion assistant, a zinc white etc. is raised, for example. As for the loadings, it is desirable that it is 0.5 - 3 weight section to the solid rubber component 100 weight section of a rubber latex. As an antioxidant, generally, although the phenols of a non-stain resistance is used suitably, you may use an amines. As for the loadings of an antioxidant, it is desirable that it is 0.5 - 3 weight section grade to the solid rubber component 100 weight section of a rubber latex.

[0029] As a bulking agent, kaolin clay, hard clay, a calcium carbonate, etc. are raised, for example. As for the loadings, it is desirable that it is below 10 weight section to the solid rubber component 100 weight section of a rubber latex. Moreover, in order to make good variance into the rubber latex of each above-mentioned additive, you may blend a dispersant. As such a dispersant, various anion system surfactants etc. are raised, for example. As for the loadings of a dispersant, it is desirable that it is about 0.3 - 1.0% of the weight in the component which is a distributed object of a weight.

[0030] In the above-mentioned rubber glove, a rubber layer thickness is suitably chosen in the domain without fear, such as fracture of rubber, and it is usually good that it is 0.2-0.4mm preferably 0.15-0.5mm. Thickness adjustment can be performed by adjusting the coating weight to the mold of the coagulant mentioned above, for example. Moreover, the above-mentioned rubber glove is JIS so that it may have elasticity required for attachment and detachment of a glove to demonstrate easy and good fit nature. K It is good that the elongation searched for by the measuring method according to 6251 is usually 800 - 900% preferably 700 to 1000%.

[0031] It is JIS so that, as for the above-mentioned rubber glove, insertion of the glove to an insertion person's hand may furthermore become easy. K It is good that the tensile stress for which it asked by the measuring method according to 6251 is usually 25-35MPa preferably 20 to 40 MPa. Next, the glove made from a resin is explained among the gloves of this invention.

Manufacture technique C. \*\*\*\*\* port type glove made from a resin (a) The melt which heats and dissolved the resin beyond the melting point, or the solution melted in the suitable organic solvent is prepared, and vegetable extractives are blended into the melt or a solution.

(b) the mould (mold) of a predetermined glove configuration -- the above (a) the process which pulls up, cools in the case of a melt, dries in the case of a solution, and \*\*\*\*\*s a resin layer on the surface of a mold after flooding with a melt or a solution -- 1 time -- or it carries out two or more times and the resin layer more than one layer or a bilayer is formed in the concerned type of front face

The mould (mold) of the configuration of the manufacture technique D. support type glove (a)' glove made from a resin is equipped with the thin glove field made from cloth.

(b) -- the glove field of 'the above (a)' -- every mould and the above (a) the process which pulls up, cools in the case of a melt, dries in the case of a solution, and \*\*\*\*\*s a resin layer on the surface of a mold after flooding with a melt or a solution -- 1 time -- or it carries out two or more times and the resin layer more than one layer or a bilayer is formed in the concerned type of front face

[0032] As a resin used for the manufacture technique C and D of the above-mentioned resin glove, it is desirable to use the resin which vegetable extractives tend to melt in an organic solvent, using the resin dissolved at the temperature which is not decomposed or discolored, for example, a polyvinyl chloride (PVC), polyurethane, a polyolefine, etc. are raised. Moreover, (a) It is desirable to make vegetable extractives contain in the concerned solution using the solution of a resin with which it sets and vegetable extractives are prepared at the temperature which seldom causes decomposition etc. [ in the above-mentioned manufacture technique C and D at this invention ]

[0033] In the glove made from the above-mentioned resin, a resin layer thickness is suitably chosen in the domain without fear, such as fracture of a glove, and it is usually good that it is 0.2-0.4mm preferably 0.15-0.5mm. Thickness adjustment can be performed by adjusting the number of times of the \*\*\*\*\* process mentioned above, for example.

[0034]

[Example] Hereafter, an example is shown and the glove of this invention is explained in detail.

Sulfur, a zinc oxide (ZnO), and zinc dibutyldithiocarbamate (BZ) were blended with the natural rubber



latex of 60 % of the weight of example 1 rubber solid contents so that it might be set to natural-rubber-latex:sulfur:ZnO:BZ=100:1:1:0.5 by weight proportion, the latex constituent was prepared, and, subsequently aloe water was added 2% of the weight 50% to this latex constituent total amount.

[0035] After, flooding with a calcium-nitrate ethanol solution (coagulant) the mold of the glove warmed at 100 degrees C for 10 seconds 20% on the other hand and pulling up a mold by 300mm/min, it was made to dry for 1 minute at 100 degrees C in oven. After immersing the mold of this glove in the natural rubber latex of the above-mentioned aloe water inclusion for 30 seconds, the mold was pulled up by 300mm/min, and it dried during several minutes at the room temperature.

[0036] Subsequently, the above-mentioned rubber layer was cured for 30 minutes at 100 degrees C in oven, was removed from the mold, and the rubber glove whose thickness of a rubber layer is about 0.4mm was obtained. Furthermore, it flooded with the tank for 10 minutes, and leaching processing of this glove was carried out, and after were immersed for 2 minutes subsequently to 250 ppm chlorine water and performing \*\*\*\*\* nation processing, the glove of this invention was obtained by washing and drying withwater.

The cotton pile was sprayed, after having fabricated the rubber layer like example 2 example 1, having flooded this rubber layer with the adhesion liquid of aloe water inclusion for 10 seconds 50% and pulling up a mold by 300mm/min. Subsequently, the above-mentioned rubber layer was cured for 30 minutes at 100 degrees C in oven, was removed from the mold, the rubber glove was obtained, further, it flooded with the tank for 10 minutes, leaching processing of this glove was carried out, and the glove of this invention was obtained by drying.

After having blended the plasticizer (dioctyl-phthalate, DOP) 100 weight section, the thermostabilizer 2 weight section, and the thickener 4 weight section with the example 3PVC paste 100 weight section, having prepared PVC resin constituent among it and, immersing the mold of the glove made from earthenware in it subsequently to the inside of this PVC resin constituent, it was made to gel at 160-180 degrees C, and the mainframe (resin layer) of a glove was obtained.

[0037] Next, after flooding the above-mentioned mainframe of a glove with the adhesives which carried out 5 weight section combination of the aloe water 50% to the acrylic emulsion 100 weight section, hair was transplanted and the rayon pile was dried for about 10 minutes at 140-160 degrees C. Subsequently, it removed from the mold and the glove made from a resin of this invention was obtained. In addition, after removing from a mold, the layer (glue line) containing vegetable extractives is an innermost layer.

[0038] When actually equipped with the glove of the above-mentioned examples 1-3, the aloe component (vegetable extractives) contained inside the glove oozes and carries out, and admiration, the feeling of grace, and the smooth feeling were gently accepted in \*\*\*\*. Moreover, the tragomaschalia after use did not accept, either.

[0039]

[Effect of the invention] It prevents a hand dry area by giving admiration, the feeling of grace, and a smooth feeling gently to \*\*\*\*, and is excellent in the skin care effect of \*\*\*\* while the vegetable extractives component contained inside the glove oozes and carries out the glove of this invention and it prevents growth of the bacteria inside a glove, and occurrence of the tragomaschalia.

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TECHNICAL FIELD

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